

Contribution to mango value chain development in Benin

Producer perception surveys

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INTRODUCTION

Agriculture is the main source of income for 65% of the population of Benin. Besides the production of traditional crops, high value crops like cashew and mango (*Mangifera indica* L., Anacardiaceae) have a great potential for national and international commercialisation. The area with mango trees is estimated to be 2,300 ha with an annual production of around 12,000 tons in 2005. However, annual losses of mango fruits are high.

METHODOLOGY - Value Chain Analysis

A value chain approach is applied to analyse the potential of mango value chain development for food security and poverty reduction. It assesses the performance of all chain actors and other chain stakeholders. The analysis is both qualitative and quantitative, and takes place at all chain nodes and segments.

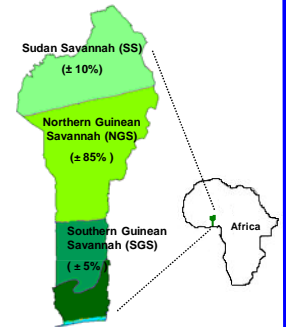
This part of the study focuses on the performance of the mango production systems. A survey was carried out in order to (i) identify current production systems (ii) assess their constraints (iii) and analyze profitability.



Mango orchard in Benin

Interviews were held with a sample of 150 commercial mango producers across three agro ecological zones in Benin (see figure 1), selected according to criteria like mango variety (local/grafted) and market access. Key questions focus on farm and farmer characteristics, perceptions on constraints and opportunities and estimated production and opportunity costs, sales and losses in the previous mango season.

Fig. 1: Agro ecological zones and estimated fraction of total mango production in Benin



Source: Adapted from Alex Wezel (1999)

RESULTS

A. Mango value chain

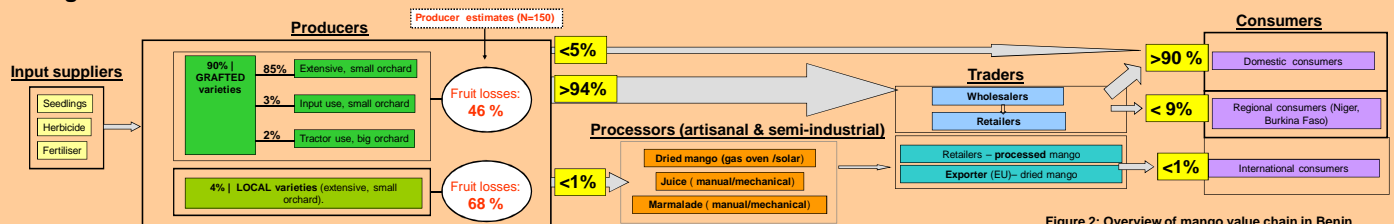


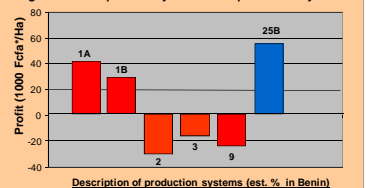
Figure 2: Overview of mango value chain in Benin

C. Profitability

Most common in Benin is extensive production (no purchased inputs) of grafted mangoes with producers transporting their fruits to a market place (Figure 4 – system 1B).

The system has a low profitability compared to production of other crops in Benin. The production of the local mango variety is not profitable because of low market value. The production of grafted mangoes in the Sudan Savannah zone are more profitable, which can be explained by late ripening of fruits and proximity to regional markets.

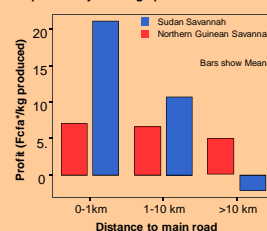
Fig. 4: Financial profitability of selected production systems



1A = NGS + grafted var. + <9 ha + farm gate sales (15%)
1B = NGS + grafted var. + <9 ha + transport (65%)
2 = NGS + grafted var. + >9 ha + tractor use + transport (2%)
3 = NGS + grafted var. + >9 ha + herbicide + farm gate sales (3%)
9 = NGS + local var. + <9 ha + farm gate sales (4%)
25 = SS + grafted var. + <9 ha + transport (5%)

Source: Data collection 2007

Fig. 5: Relation between orchard location and financial profitability of mango production in Benin



Source: Data collection 2007

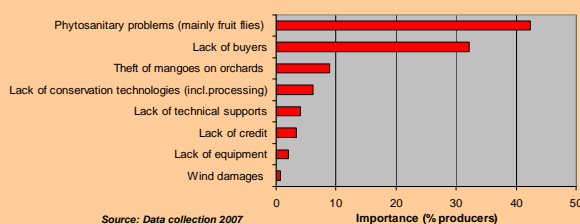
Marketing factors including market access and transaction costs are highly affecting profitability, as shown in Figure 5.

The distance of the orchard to the road (remoteness) shows a negative trend regarding the profit per kg mango produced.

B. Constraints

The two main constraint as perceived by producers are losses due to the infestations of fruit flies and a lack of buyers (see figure 3). We can assume therefore, that even when fruit losses are reduced through effective pest management, the valorization of the increased quantity is not guaranteed. For this further actions are required, including value adding and exports.

Figure 3: Main constraints observed by mango producers in Benin (N=150)



Source: Data collection 2007



Mango harvesting in Benin

CONCLUSION

At producer level, fruit losses are high due to damage caused by fruit fly infestations and lack of buyers. Improved pest management technologies may improve mango quality and reduce losses, however, to substantially increase the profitability of mango production also market access to existing and new markets needs to be improved. For smallholder mango producers to fully exploit the opportunities of emerging markets, there is a need to develop alternative and innovative value chains based on filling their resource gap.